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A University Chapel

Architecture

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A UNIVERSITY CHAPEL

BY

MAX ALFRED MONTGOMERY

THESIS

FOR THE

DEGREE OF BACHELOR OF SCIENCE

IN

ARCHITECTURE

COLLEGE OF ENGINEERING

UNIVERSITY OF ILLINOIS

1912

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JUNE 1st, 1912.

THIS IS TO CERTIFY THAT THE THESIS PREPARED UNDER MY SUPERVISION BY

ALFRED MAX MONTGOMERY

ENTITLED A UNIVERSITY CHAPEL

IS APPROVED BY ME AS FULFILLING THIS PART OF THE REQUIREMENTS FOR THE

DEGREE OF BACHELOR OF SCIENCE IN ARCHITECTURE

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A UNIVERSITY CHAPEL

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A UNIVERSITY CHAPEL

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STATEMENT OF PROGRAM

LOCATION: - -

It is presumed that this chapel is to be located on an imposing quadrangle around which are grouped the main University buildings. This location affords excellent opportunity for beautiful landscape effects such as small walks, drives, and pathways, leading from the formal quadrangle to the informal background.

GROUND FLOOR: - -

This floor to contain the following rooms, viz.:

Entrance Vestibule leading to main floor above.

Two small lecture halls to seat about one hundred people.

Dining room with attending kitchen to hold formal banquets for visiting guests and speakers of importance.

Reception room for entertaining important visitors.

Hall of Fame for exhibiting University relics, mementoes, memorials, etc.

Toilet and cloak rooms.

Stairway for speakers, leading up direct to speaker's platform.

MAIN FLOOR: - -

This is the important floor and contains the chapel proper in one large room to seat about five hundred people.

People enter through a vaulted vestibule over which is located the choir loft and organ.

People face the speaker's platform with seats around for the Faculty.

SOLUTION OF PROBLEM

It was clearly evident after considerable study that since the ground floor was unimportant as compared with the upper main floor that it could have about a fourteen foot ceiling and serve as a sort of base for the superstructure, thus giving ideal proportions for the whole building, making it tall and graceful. The Sainte Chapelle in Paris furnishes a very good example of the tall and graceful building which seems to call for the Gothic style, or vice versa. So much for the big idea, that of the general proportions.

As to the disposition of rooms on the ground floor, the entrance vestibule was so designed that it opens up under the choir loft, thus giving an effect of grandeur and leading the entering people unconsciously up to the second floor where ordinary chapel exercises are to be held.

Two small lecture rooms open, one on each side, from this main vestibule and at the rear of each is a platform. These rooms are merely meant for small gatherings of clubs, societies, etc., or for small musicales and other meetings requiring the use of only a small auditorium.

To the rear, reached by a corridor from the vestibule, is found the dining room where the President may dine with and banquet distinguished people.

Across the corridor the entertaining room is located and this may forma meeting place for pleasant chats and conversations preparatory to ushering the speaker up to the main floor, directly by means of a small speaker's stairway.

The Hall of Fame is directly under the apsidal end of the main floor and since it is semicircular in plan it affords a great chance, I think, for exhibiting such sacred University relics as busts of noted educators, memorials, tablets, etc. These would probably be arranged around the outside wall and could be made to harmonize with the system of vaulting, or niches could be

built in the walls.

The main floor, is, of course, the most important, and I have lavished a great deal of care and thought to produce in it a good example of a large single room treated in the Gothic style with the attendant vaulting. There are two sides and a center aisle in the seating, which furnish easy ingress and egress for the five hundred people which this room will seat comfortably. The people face the apsidal end, around the exterior walls of which are located seats for the most important members of the Faculty, and at the center is the speaker's pulpit. This pulpit is at the focal point of both the Faculty and auditorium seats, hence it is the center of importance and as such was chosen as the place for the speaker.

Above the front vestibule is the choir loft with organ divided and placed in either side of that particular bay of the interior and covering up the spaces between the buttresses, in which is found the machinery necessary to the manipulation of an organ.

I found that the most satisfactory way of working out the vaulting was to design one bay of the vaulting in plan, longitudinal and cross section, determining necessary heights before attempting to draw the elevations definitely. This method simplified the work enormously, as otherwise there would have to have been a constant adjustment of one to the other.

In this style it is essential to draw all the forms in detail before making any drawings, hence I spent much time in the library making sketches, tracings, etc., of detail such as I thought would be needed, and while drawing the building up I constantly was called upon for this detail.

The last thing to design was the belfry tower, which is merely the speaker's stairway carried on up and terminated in a delicate, lace-like cupola.

HISTORICAL

Chapel - - a place of worship differentiated from a church in one of several ways, in either as being smaller or as of a sect or rite not the established one of the nation; or as being accessory, or attached, to a large building or dependent upon it or the foundation. Specifically: - -

A. A place of worship, not the principal church of a parish or of a diocese; in this sense Protestant places of worship in Catholic countries, or the like, are called chapels, and in England, buildings of Dissenters.

B. A structure built in connection with a church and opening from it. Along the aisle of a large church it is customary to build chapels opening from the aisles -- like bay-windows; either closely adjoining one another, as in the sides of the nave aisles, or forming absidioles around the chevet of the east end. The addition of these to large Gothic churches often forms one of their greatest architectural features. True chapels are so large as to form buildings of separate design, as Lady chapels. Sometimes one bay, or in rare cases, a still larger space is screened off and used as a chapel.

C. A place of worship attached to a building or large dwelling, often an oratory, but more rarely a separate building like a church. St. Mark's church in Venice has a chapel of the Doge until the present century, and Ste. Chapelle at paris has the chapel attached to the ancient palace of the king.

Chapels sub tecto, as adjuncts, and not integral portions of a church, are rarely seen of an earlier date than the thirteenth century, even in a cathedral. In that age the services were multiplied to suit the time of worship convenient to the congregations, or to satisfy the privileged bodies who chose to have their own oratories; and in monasteries, where the choir was enclosed by stalls and screens, chapels were built outside the choir, so that the congregation might see and hear distinctly; but the fourteenth, fifteenth and sixteenth cen-

turies formed the era of the erection of chapels, especially of Lady chapels.

On the contrary, chapels sub texto, forming integral portions of the dominant structure, especially absidal chapels, are known to date from the ninth or tenth centuries in central France, and from the eleventh century in the north and east of France and from the twelfth century in Normandy and Burgundy. After that period chapels are found attached to the nave-aisles, both in cathedrals and parish churches. It is scarcely necessary to notice the common type of wall with window in it joining the faces of the buttresses of these aisles. This arrangement is often in the later Jesuit churches.

EXAMPLES.

Arena Chapel, Padua, Italy.

Collenoni Chapel, Bergamo, Lombardy.

Expiatory Chapel, Paris.

St. George's Chapel, Windsor, England.

Henry the Seventh's Chapel, London.

King's College Chapel, Cambridge, England.

Pauline Chapel, The Vatican, Rome.

Sistine Chapel, The vatican, Rome.

St. Matthew's Chapel, London.

Sanite Chapelle, Paris.

Chapel of the Nine Altars, Durham, England.

St. John's Chapel, London.

Lambeth Palace Chapel.

Merton College Chapel, Oxford, England.

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Regarding the design in general, a building in the Gothic manner should, if it is to be a success, be designed from the inside outwards, and very usual features as buttresses in a Gothic building are, properly speaking, part of the construction and should not be introduced merely for the sake of dividing up the wall spaces and making the drawings look a little more attractive. Well-designed buttresses, where they are required structurally, are, of course, one of the finest features of Gothic work; but they must not be used as the pilasters in a classic front, merely as ornament.

As a good outline is a far greater importance to a building externally than any amount of ornamental detail, and it is a prevalent fault of modern work that it is often overloaded with trivial detail, which, though it may make a set of drawings more attractive, has only a harmful result when carried out in actual work. A good, well-proportioned building may very possible be improved by well-designed and suitable detail and enrichment, but no amount of either of these latter will conceal a bad design. Many persons do not realize the fact that a building is never seen in the way that it is shown in architectural elevations and sections, and with the view of making these latter works attractive, features are often put in that the actual building would be better without. Good Gothic does not consist in the endless multiplication of cusps and paterae or monograms, charming as these ornaments may be when judiciously used.

A great deal also depends on the proper use of materials. A good design may be easily reduced to a very dull level in actual work if the modern method of having every stone exactly the same color and size, and every brick the same color, and so on, is folllowed.

The proportion and details of the piers and arches are also a matter of the greatest importance. More may be done by fine ample proportions and good simple moldings than by a quantity of carving and ornament

The interior and exterior should be perfectly correlated. It is a mistaken idea, when one considers the spirit of Gothic art to consist of irregularity and quaintness. A church as well as any other monumental building should have a symmetrical place and form, if the size and shape of the lot permits. The irregularity of plan, etc., of the old churches is the result of necessity or accident or of later additions, and is perhaps more noticeable of the Elizabethan than of the earlier work. It has been said that "the pointed style is indeed a style of liberty, but not of lawlessness. Laws, though self-imposed, are essential to nobility in art. Without them, freedom becomes licentiousness, refinement becomes mere prettiness, and originality descends to eccentricity and vulgarity. The first architectural law is to do the right thing in the right place, not because it is "Gothic" or correct, but because it is right."

So, in conclusion, if one can so design a church or chapel that those who can read architecture will feel that the exterior and the interior and all their parts are organically connected, it is half the problem, and the rest will be provided by artistic instinct.

The building should be suitable for the locality in which it is to rise. It should be quiet and dignified, and the chapel should be designed in the characteristic style of the surrounding buildings so as to be in harmony with them. Local material should be used in its construction wherever possible, as in this way the work becomes the more a distinct portion of the soil on which it is to stand.

In planning a chapel, the question of accommodation necessarily comes forward as a ruling factor, and this, together with the limit of cost imposed, will decide many points. But given, as a beginning, the necessity of providing a nave to house the congregation, and a sanctuary for the altar, with also a space for the choir, a start is made. Two practical needs are to be satisfied; for the first the nave, and for the second the sanctuary, is provided. There

are two things necessary, but they involve many others. Many things, however, connected with the disposition of the essential parts of the sanctuary, the choir, and the nave must also be solved. Considered in detail, we may, generally speaking subdivide the subject as follows:

1. The sanctuary: a, altar; b, reredos; c, steps; d, altar rails; e, sedilia; f, piscuia and credence; g, altar and sanctuary lights.

2. The choir: a, reading-desk; b, choir-rests; c, lectura; d, steps; e, screens; f, organ.

3. The nave: a, seating; b, aisles or passages; c, porches; d, e, font; f, pulpit; g, litany desk; h, floor levels.

4. The side chapel.

5. The vestries, sacristy, cleaners' rooms.

6. Lighting, heating, ventilation, drainage, roofs, musical considerations.

It will not be necessary, nor it it the scope of this discussion, to refer to all of them, and only the more important will be noticed.

The altar is first to be considered, together with those conditions growing out of its use and position; after it the pulpit, and the accommodation of a congregation so that a speaker may be seen and heard, will require attention.

As you cannot have a Christian church without an altar, and as the chief reason for building a church at all is to provide a sanctuary as the altar, naturally this feature and its disposition is of great importance, and unless we make this point the reasonable cause of our building, the focus towards which all the idea of the design is drawn so as to give unity to the whole conception, we shall fail to make the chapel serve its true purpose and satisfy the aim of its beginning.

We place the altar at the east end of the building and enclose it more or less within the sanctuary, and it should be close but not attached to

the eastern wall.

Though the reredos cannot, in one sense, be said to affect the plan of a chapel, yet it does most certainly play a prominent part in all questions of design. It calls for very careful treatment. An east window is not always necessary. Historically, a reredos is the Gothic representative of the Italian "baldacchino"and the Greek "iconoastasis", and all these have their origin in the curtains and their supports which were used as early as the third and fourth centuries to screen the altar ceremonial.

The altar should be raised above the level of the nave floor. In a long and large chapel it may with advantage be higher than in a small and short one. Otherwise, in the former, case, it might not be seen at all. Next, there should be one step, and one only, at the entrance to the sanctuary from the choir.

The true place for any distinction between one division of the church and another is at the entrance to the sanctuary, not at the entrance to the choir. If anything in the nature of a chancel arch be used, let it be placed above the entrance to the sanctuary.

In planning the arrangement of the sanctuary, provision should be made for the sedilia, the seats for the celebrant and his assistants. The sedilia as a rule should be on the south side, and may be structural or not. Two feet at least should be allowed for each person.

We have now to consider the choir. This, like the sanctuary, should not be less than eighteen feet wide.

In the seats for the choir, the space from back to back of the benches should not be less than three feet clear.

In thinking out the details for the choir plan a sufficient space will be required in which the lectern should stand. It may be within the confines of the choir, or else close by in the eastern part of the nave.

As the organ is placed in the church for practical reasons, it therefore should be placed so that it can be used. The organ should have a distinct relation to the size of the building. It should be protected from damp and great variations of temperature.

In the nave the unit upon which the general dimensions and the details of arrangement will largely depend is the area that is to be allowed for each sitting. This will affect the width of the nave. Three feet should be allowed from back to back of benches or chairs. The central passage of the nave ought not to be less than four feet wide. The floor of the nave should be all one level transversely and without any step up where the seats are, but there is no reason why the nave should not be higher towards the west than the east in a long plan.

Like the reredos, the font has an interesting history, for we find its counterpart in the laver which was placed in the outer court of the tabernacle. No doubt the fountain which was placed in the center of the atrium attached to the early plans was derived from this earlier suggestion. Later, however, came the baptistry. Sometimes this was a separate building, or else a distinct chamber attached to the church near the principal entrance. This was dispensed with and the font only remained in use.

In allowing for the pulpit in plan the first requisite is that it shall be so placed that the speaker may be heard in any part of the building. Wood is a warmer material for pulpits than stone. It will be sufficient if the floor of the pulpit be carried no more than three feet above the nave level in a church of moderate dimensions, but it may with advantage be placed higher than this, especially if it is to be used in speaking to a large congregation, in which case a sounding board above the pulpit is a useful addition.

A church is nearly always better lighted if the windows are kept high in the walls. It is not necessary to have a clerestory to effect this. Artificial lighting is a more complex problem. The first thing is to avoid too

little, and the next, too much, light. Further, the points of light are best arranged so that the glare of them is, if possible, not seen from the west end. Brackets or pendants can be hung high, but not too high up, or fixed in the east side of the nave piers. A row of lights hung down the center from the roof, or standard at a low level are most objectionable.

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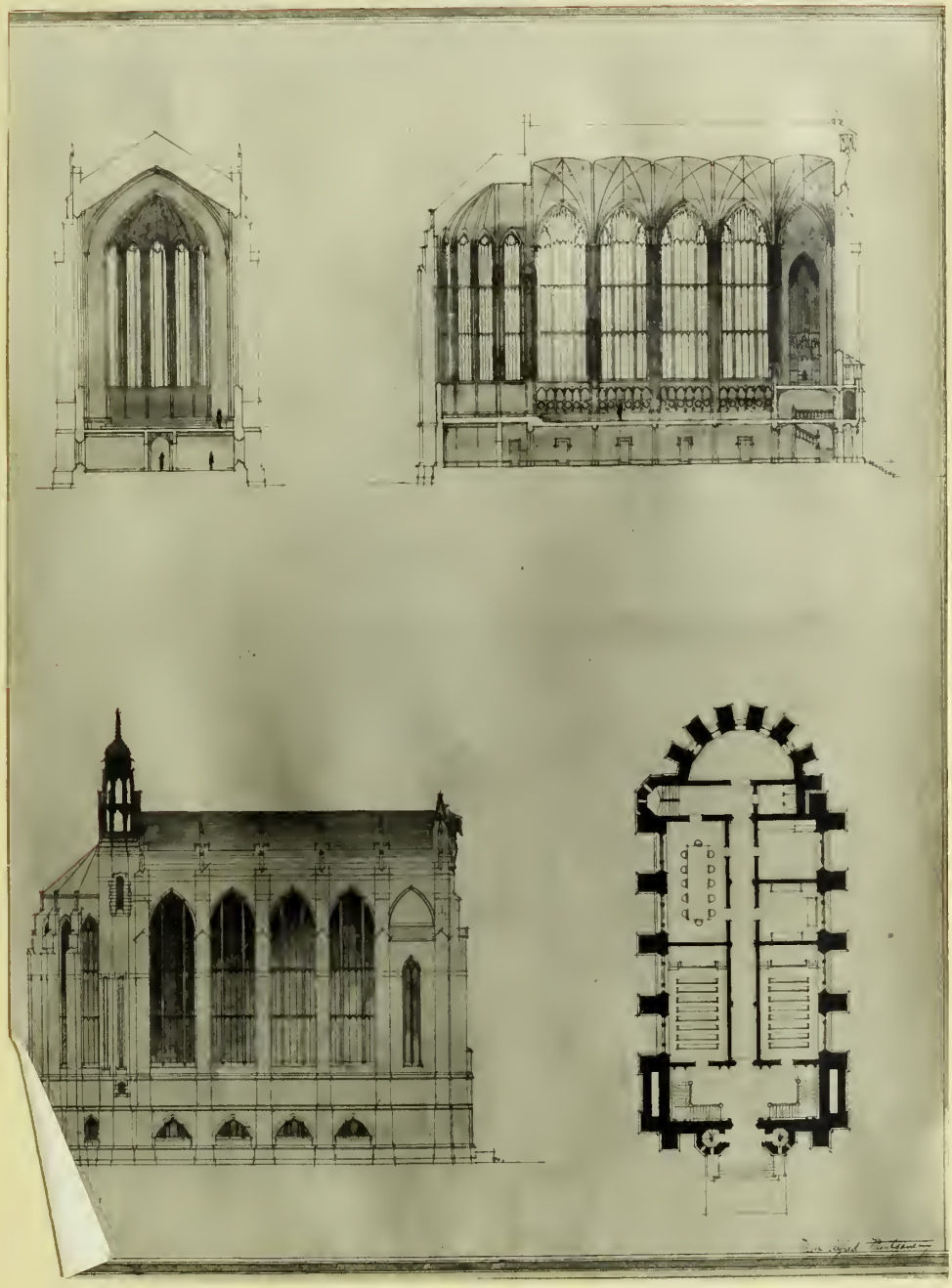

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